5 T807/808 Functional Testing

The following test procedures will confirm that the T807/808 has been set up and adjusted correctly and is fully operational.

Refer to Figure 4.1 for test equipment details.

The following topics are covered in this section.

5.1 Basic Operation

To confirm the basic operation of the power supply, proceed as follows.

Set up the test equipment as shown in Figure 4.1.

Ensure the front panel "Power" switch in the ***off*** position. Connect the T807/808 to the mains supply. The red "Standby" LED should illuminate.

Set the output DC load to maximum resistance/minimum current.

Depress the "Power" switch to turn the T807/808 ***on***. The green "On" LED should now illuminate and the red "Standby" LED should extinguish.

Vary the DC load and check that the output voltage and current are within the specifications (refer to Section 1.2.4).

5.2 Undervoltage Lockout & Mains Input Current

The figures in brackets [ ] are for 115V/60Hz versions of the T807/808.

Ensure the T807/808 "Power" switch is in the ***off*** position.

Set up the test equipment (except PS1 & PS2) as shown in Figure 4.1.

Switch on the mains supply and adjust the Variac for 230V or 115V output.

Switch the T807/808 ***on*** and set the DC load for maximum current (T807/15A; T808/25A).

Slowly reduce the Variac voltage from 230V [115V] until "drop-out" occurs (output current and voltage drop to zero and LED's turn off).

Check that the AC input current and voltage at "drop-out" are as follows:

input current	T807: <2.5A [<4A]
	T808: <4A [<6A]
voltage	<185V [<95V]

Slowly increase the Variac voltage and check that the supply turns on again at approximately 10V [5V] above "drop-out" voltage.

Note: Some on/off oscillation may occur around this voltage point, particularly with a relatively high mains impedance (Variac, mains transformer, etc.) and the power supply load being set to maximum current. Increasing the mains supply by a few volts should turn the supply fully on.

5.3 Output Noise

Set up the test equipment (except PS1 & PS2) as shown in Figure 4.1.

Connect a digital voltmeter (e.g. Fluke 77) across the load terminals and set the meter to its lowest AC volts range.

Check that the reading is <10mV AC for both the T807 and T808 under all load and line conditions.

Note: A ***real*** reading of the level of noise present on the output of a switching power supply is very difficult to obtain, as low noise levels, common mode noise paths and ground loops all lead to inaccurate measurement results. The procedure outlined above will, however, give a good indication of the output noise.

5.4 Overall Power Supply Stability

Connect the oscilloscope across the output.

Vary the mains voltage and DC load over the full specified range (refer to Section 1.2).

Check on the oscilloscope that no oscillations occur.

Check that no audible noise can be detected, except with open and/or short circuit loading on the output.

